UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,072	04/19/2004	Sujeet Kumar	2950.19US02	1878

62274 7590 01/08/2009

DARDI & ASSOCIATES, PLLC
220 S. 6TH ST.
SUITE 2000, U.S. BANK PLAZA
MINNEAPOLIS, MN 55402

EXAMINER	
HODGE, ROBERT W	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
01/08/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 10/27/08 have been fully considered but they are not persuasive. Applicants state that the secondary reference to Nakamura teaches away from the instantly claimed invention because it teaches larger particle dimensions than what is instantly claimed. However the secondary reference is not relied on for the dimensions of the particle diameters, the primary reference to Kaneda already teaches particle sizes within the range as recited in the instant claims. The purpose of Nakamura is to show a teaching of particle size distribution thereby conceptually modifying Kaneda to have a particle distribution in the nano range. Furthermore a second motivation statement was made outside of applying the Nakamura teaching, stating that it has been held that optimization is an obvious variation. Applicants further state that Narukawa does not make up for the deficiencies of Kaneda and Nakamura, however as clarified above Kaneda and Nakamura do not have the supposed deficiencies as applied in the obviousness rejection, which will be reiterated below.

The Examiner acknowledges that claim 8 has been canceled and therefore any rejection or objection to claim 8 is now moot.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 5, 7, 9, 10, 43-45, 47, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,638,662 hereinafter Kaneda in view of U.S. Patent No. 6,103,213 hereinafter Nakamura.

With respect to claims 1-3, 5, 7, 43-45 47 and 49 Kaneda teaches a positive electrode active material of lithium cobalt nickel oxide ($Li_xNi_yCo_{(1-x)}O_2$ wherein $0 \leq x \leq 1.2$ and $0 \leq y \leq 1$) having an average particle size of 3 to 40 nm. See Column 6, Lines 51-59.

With respect to claims 1, 9 and 43 Kaneda does not specifically disclose the particle size distribution of the lithium cobalt composite oxide.

Nakamura teaches a process for producing lithium-cobalt oxide particles wherein the final product of the production process yields lithium-cobalt oxide particles that have a narrow particle size distribution and a uniform small particle size (abstract and column 7, line 55 – column 8, line 24).

At the time of the invention it would have been obvious to one having ordinary skill in the art to provide lithium cobalt composite oxide particles that have a narrow particle size distribution and a uniform small particle size in Kaneda as taught by Nakamura which would yield the predictable result of preventing particles from being fused together while at the same time increasing the surface area of the particles which when used as the active material in a battery provide more active cites on the active material for reaction to occur thus increasing the overall efficiency of the battery. Furthermore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to optimize the distribution of particle sizes of the lithium cobalt composite oxide particles in Kaneda since it has been held that where the

general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claims 10 and 50, Kaneda teaches the use of the lithium oxide as the cathode active material in a battery. See abstract.

Claims 4, 6, 46 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneda in view of Nakamura as applied to claims 1 and 43 above, and further in view of U.S. Patent No. 6,534,216 hereinafter Narukawa.

Kaneda as discussed above is incorporated herein.

Kaneda discloses the positive electrode active material including composite oxides such as lithium cobalt oxide, lithium nickel oxide, lithium manganese oxide, lithium nickel cobalt oxide, etc.

Kaneda does not specifically disclose the lithium cobalt oxide is Li_2CoMnO_4 or Li_2CoAlO_2.

Narukawa et al. teach a positive electrode active material for a non-aqueous electrolyte battery, wherein a portion of the lithium cobalt oxide may be substituted for a different kind of metal selected from the group consisting of Mg, Al, Ca, V, Ti, Cr, Mn, Fe, Co, Ni, Cu, Zn, Sr, Zr, Nb Mo and Sn. See Column 7, Lines 52-60. It can be understood that Li_2CoMnO_4, Li_2CoAlO_2 and Li_2CoNiO_4 are considered functionally equivalent positive electrode active materials.

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute Li_2CoMnO_4 (or Li_2CoAlO_2) for Li_2CoNiO_4 as the positive electrode material in the battery disclosed by Kaneda that has the average diameter less than

about 100 nm since the above compositions are shown to be art recognized equivalents by Narukawa.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. H./
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795